its geographical discontinuity and the resemblance to *L. emarginata,* which is common in the two regions, provides ground for the belief that *contracta* is not a true species, but simply an environmental variation. The identity of the shells has been verified by Mr. Baker.

Barney Lake lies in an irregularly shaped pocket, one end of which is a curving sand dune. A little over this dune is Lake Michigan. The owner of Barney told me that the water level varies with the general level of the large lake, and that at one time it went almost completely dry. This was when Lake Michigan was in a cycle of falling levels. So it may be that the mollusean fauna of the inland Barney Lake has to be renewed at periods and *contracta* has to be evolved from reintroduced *L. emarginata.*

A COMPARISON OF YOUNG *HELMINTHOGLYPTA UMBILICATA* AND *H. DUPETITHOUARSI*

BY GLENN R. WEBB

It seems desirable to record some chance observations on the likenesses and differences of equal sized 2–2½ whorled young of *Helminthoglypta umbilicata* (Pilsbry) and *H. dupetithouarsi* (Deshayes). The young *umbilicata* are the offspring of adults received from Mr. Ernest N. Wilcox, who obtained them from ". . . under old logs in a swamp just back of the pump station of the Union Oil Co. at Santa Margarita, California." I am equally indebted to Mr. E. P. Chace for the *dupetithouarsi* specimens, the parent material being collected under brush and trash of an open pine grove near Point Pinos, Monterey County, California.

The unsought opportunity of studying the young of these two species was occasioned by the numerous viable eggs deposited by adults kept for anatomic studies. In view of the fact that I have not had extensive personal experience with these Western land snails, and that much of the literature is probably unknown to me, these observations may not be entirely new.

Helminthoglypta umbilicata young: The slightly indented nuclear section of the embryonic whorl occupies one-fourth volution and is smooth, unpolished, and microscopically granular.

Within the next quarter-volution, transversely elongate pustules appear by the inferior suture, lengthen, increase in numbers, and ultimately bridge from suture to suture. Within the first-quarter of the last-half of the first volution, the elongate pustules tend to become broken-up, scattered, and slightly sinuous, disappearing on the whorl-face as dot-like papillae among the arising ripple-striae; the diminished, papilliform pustules persist by the inferior suture, however, until nearly the end of the first whorl. With the disappearance of the apical-pustules, a series of transverse, close-spaced, finely undulant or rippled striae appear and become progressively finer and closer spaced until they disappear on the post-embryonic whorl—breaking up into smaller and smaller segments to form micro-papillae. An examination of fresh shell-growth on a near-mature collected specimen failed to reveal either micro-papillae or the much larger hair-base papillae. The transformation of the ripple-striae is somewhat veiled by the conspicuous growth-striae which appear on the post-embryonic whorls.

The young shell is strongly hirsute on the early whorls with conspicuous, tapering hair-spinules; these arise on the last half of the first whorl. The hairs are aligned in protractive and retractive, oblique, curved series. This dual alignment is more perfect in some specimens than others, particularly in respect to the retractive trend. The hairs are shorter, closer spaced, and more numerous on the later whorls—the progressive shortening being quite apparent. The regular ripple-striae are interrupted about the base of the hairs, giving them the appearance of having erupted through the ripple-striae. The hairs on the post-embryonic shell (after the disappearance of the ripple-striae) still present this "erupted" appearance, being encircled sparsely by radiating, hyphen-shaped micro-papillae.

On most young shells, the revolving, brown shell-band is not yet evident.

The deep, narrow umbilicus exhibits numerous small, hyphen-shaped pustules aligned in curved, retractive series on the first whorl; but these seem to become transformed into scattered papillae on the second. The ventral-surface hairs (often disarrayed and variously twisted) do not usually extend into the umbilicus.

Helminthoglypta dupetithouarsi young are similar in general shell-sculpture to young *umbilicata;* however, there are a number of constant and nonconstant differences. Enumerated, the constant differences include:

(1) The shorter, more numerous hairs of *dupetithouarsi.* (2) The more widely spaced hair-lines of *umbilicata.* (3) The reddish shell of *dupetithouarsi* as compared to brownish *umbilicata.* (4) The prominent, red color-band of *dupetithouarsi.* (5) The more polished shell of *dupetithouarsi.* (6) The more intensely black-spotted mantle of recently hatched *umbilicata.* (7) The coarser, more intensive sculpture of the intra-umbilical whorls of *umbilicata.* (8) The less black more slate-blue body coloration of *dupetithouarsi.*

Whether all of these constant differences are typical of the species or merely relative to the respective strains of the species compared, I do not know. Stated for *dupetithouarsi,* the nonconstant characters are: the generally larger apical whorl; the weaker and more scattered apical pustules; the finer, less persistent ripple-striae; the smaller hair-base papillae and bent-tipped hairs, the curl causing the hair-tip to point in an up-spire direction; and lastly, the earlier development of the shell-band. These characters, by appropriate negative or positive implication, characterize *umbilicata* as well.

Before concluding this *dupetithouarsi-umbilicata* comparison, the resemblances demand consideration. Thus, as has already been suggested, the general plan of sculpture is similar for the two forms. Both have an initially smooth shell-nucleus, apical pustules, ripple-striae, hair-spinules, and "erupted-hair" appearance. The resemblances continue on the post-embryonic whorls in the "erupted-hair" marks and the numerous micropapillae.

By way of conclusion, I offer a few queries which presented themselves during the coarse of the observations. These are: (1) Do all young *Helminthoglypta* bear hairs? (2) Are the larger papillae evidence of past hirsuteness in adult shells? (3) Is *H. walkeriana* (Hemphill) papillate? (4) May not size of hair and space between hairlines afford important taxonomic-phylogenetic clues? (5) Would the offspring of alleged *dupetithouarsi-umbilicata* intergrades duplicate the differences cited here?

A casual survey of the most accessible descriptive data, principally from the synopsis of *Helminthoglypta* species presented by Dr. Pilsbry,[1] affords some interesting hints in answer to some of these queries. Thus, about 12 species are known to be hirsute: *H. benitoensis, H. californiensis, H. cuyama, H. cuyamacensis venturensis, H. dupetithouarsi, H. fontiphila, H. nickliniana, H. petricola* and var. *orotes, H. sequoicola, H. traski tejonis, H. tularensis sequoia,* and *H. umbilicata.* Also, all species except five (*H. allyniana, H. berryi, H. contracostae, H. exarata, H. ferrissi*) possess papillae. Possibly *H. walkeriana* should be included among the non-papillate species, although several specimens in my possession exhibit papillae in oblique, curved, protractive rows on the embryonic-shell.

THE TYPE OF *NEPTUNEA* "BOLTEN" RÖDING

Dr. Pilsbry, Chairman of Committee on Nomenclature, A. M. U., has received the following inquiry from Dr. Joshua L. Baily, Jr.

"Would you mind giving me benefit of your opinion on the use of the name *Neptunea?* This name first appeared in the Museum Boltenianum, 1798, without diagnosis. It included a multiplicity of species now placed in different families.

"In 1840 Swainson suggested the name *Chrysodomus,* naming *Neptunea antiqua* as type. Then in 1901 Cossmann named the same species as type of *Neptunea.* This serves to make the two names synonymous, and whichever name is used will be determined by whether a name published without a description has any standing. In this case where species were given it is possible to tell what the author intended, but the fact that he included a heterogeneous assembly makes it doubtful what he would have considered was typical of his genus.

"Then in 1918 Dall designated *Neptunea clathrus* Bolten as type of *Neptunea.* Apparently he was unaware of Cossmann's earlier designation or he may have believed that Swainson's selection of this species as type of *Chrysodomus* precluded its later selection by Cossmann. But *Neptunea clathrus* had already become the type of *Boreotrophon* Fischer, 1884, by monotypy. If this

[1] Pilsbry, H. A., 1939, Land Moll. of N. America, Vol. 1, pt. 1, pp. 63–201.